Amendments to the Specification

Please replace paragraphs [0003], [0004], [0018], [0030], [0032], [0033], [0034] and [0037] currently in the specification with the following paragraphs:

[0003] In accordance with the present invention, it has been found that a tread design having shoulder ribs of a particular width and a land-sea area ratio which is about 4-8% greater than its void volume ratio provides a tire exhibiting improved traction both on dry and slippery surfaces.

[0004] Accordingly, the present invention provides an improved pneumatic tire whose tread pattern has four or five circumferential ribs including inner and outer shoulder ribs, each having a set of lateral grooves extending from their respective shoulders toward but not reaching an adjacent circumferential groove, the shoulder ribs also having multiple sipes arranged between adjacent pairs of lateral grooves, wherein the width of at least one shoulder rib is between about 17% and about 19% of the width of the tread, and further wherein the land-sea surface area ratio defined by the tread is about 4-8% larger than the void volume ratio defined by the tread.

[0018] As shown in Fig. 2, inner shoulder rib 30 defines a set of inner lateral grooves 38 which extend from the edge of shoulder 40 of tread 16 toward, but not all the way to, inner circumferential groove 20. In addition, shoulder rib 30 also defines multiple sipes 42 and 44 between adjacent pairs of inner lateral grooves 38 which extend all the way to inner circumferential groove 20. In the same way, outer shoulder rib 32 defines a set of outer lateral grooves 46 which extend from shoulder 48 of tread 16 toward, but not all the way to, outer circumferential groove 22. Similarly, outer shoulder rib 32 also defines multiple sipes 50 and 52 between adjacent pairs of outer lateral grooves 46 which extend all the way to outer circumferential groove 22. In the particular embodiment shown, inner lateral grooves 38 and sipes 42 and 44 in inner shoulder rib 30 (and outer lateral grooves 46 and sipes 50 and 52 in outer shoulder rib 32) are spaced such that the distance between inner lateral groove 38 and sipe

42 versus the distance between sipes 42 and 44 versus the distance between sipe 44 and the adjacent inner lateral groove 38 are in a ratio of 25/50/25 to 35/30/35.

[0030]. As in other pneumatic tires, tread 16 of tire 10 defines a void volume ratio, which is a measure of the volume of open space in a given volume of tread above the bottoms of circumferential grooves 22 and 26, which is represented by section line 112 in Fig. 4. Similarly, tread 16 also defines a "land-sea surface area ratio," which is a measure of the surface area of the outside surface 118 of the tread which is occupied by grooves and sipes relative to the entire surface area of the tread. Normally, the land sea area ratio defined by tread 16 of tire 10 will be about 4-8% larger than its void volume ratio. For example, if the void volume ratio is 26% (i.e., if 26% of the volume between section line 112 and outside surface 118 of tread 16 is open space), then the land-sea area ratio will be about 30-34%. In the particular embodiment illustrated in Figs. 1, 1A and 2, tread 16 defines a void volume ratio of about 26.3 ±1.0%, more especially about 26.3 ±0.5%, and a land-sea surface area ratio of about 32.0 ±1.0%, more especially about 32.0 ±0.5%. Tires in which 62 to 70%, and in particular about 67%, of the "sea area" is due to the circumferential grooves of the tread are especially interesting. In this context, "sea area" means the surface area of the tread defined by grooves and sipes.

[0032] As indicated above, the inventive tire has been designed to exhibit improved traction on both dry road surfaces as well as road surfaces made slippery by rain or snow. Improved dry traction is due to a number of design features including the width of shoulder ribs 30 and 32. In addition, the ability of U-shaped rib sections in the intermediate ribs and corresponding L-shaped rib sections 75 and I-shaped rib sections 77 in central rib 28 to "interlock" with their adjacent I-shaped rib sections because sipes 72, 74, 76, 78, 80 and 82 are curved in configuration also contributes to this result. The void volume ratio and land sea area ratio of the tread in the particular tire shown also contribute, as does the low pitch number.

[0033] Similarly, improved traction in rain or snow is due, among other things, to the depth of lateral grooves 66, 68 and 70, which provides rib flexibility and larger lateral gripping edges on snow, both when the tire is new as well as after it is worn. The particular relative spacing between the lateral grooves and the sipes in the shoulder ribs also contributes to this result. Similarly, the use of curved sipes arranged at acute angles, especially in the central and two intermediate ribs, also contributes to this result. The void volume ratio and land sea area ratio of the tire in the particular embodiment shown also contribute to this result, as they promote greater water dispersion and improved "self-cleaning" in the snow.

[0034] In particular, the enhanced traction of the inventive tire is attributable among other things to a balance between the sipes, grooves and amount of rubber in its tread, which is in turn is reflected in the arrangement of sipes and lateral grooves in the tread, the relative ratio of the void volume ratio to the land-sea area ratio in the tread, and the total number of pitches in the tread.

[0037] Finally, Fig. 8 has been presented to show the details of the groove geometries in the tire illustrated in Figs. 1, 1A and 2. As can be seen from this figure, the side walls of the lateral grooves in the central and intermediate tread ribs, which are depicted by Section C-C, are arranged at an angle of about 1° with respect to the vertical. Similarly, the side walls of the lateral grooves in the shoulder ribs, which are depicted by Section D-D, are arranged at an angle of about 5° with respect to the vertical. On the other hand, the side walls of the circumferential grooves, which are depicted by Sections A-A and B-B, are arranged at an angle γ with respect to the vertical, with angle γ varying from about 10° to about 15°. As indicated above, it is desirable that the tread 16 of the tire of Figs. 1, 1A and 2 have a particular void volume ratio and a particular land-sea area ratio. To deal with this problem, angle γ can be changed in tires of different sizes, so that the desired void volume ratio and land-sea area ratio can always be maintained.